Copyright Clearance Center

Industry
Non-profit Tax

Location
Global

About
Founded in 1970 as a non-profit organization dedicated to creating a level playing field for all taxpayers, Tax Analysts is the only independent, nonpartisan multimedia organization dedicated to fostering an open and informed debate on taxation. As an influential provider of tax news, analysis, and commentary for the global community, its multimedia products are a daily must-read on global tax administration and policy matters for more than 150,000 tax professionals in law and accounting firms and government agencies. Key products include Tax Notes, Tax Notes Today, State Tax Notes, State Tax Today, Tax Notes International, and Worldwide Tax Daily, written by the industry's largest tax-dedicated staff of more than 250 domestic and international correspondents.

Case Study

Future-ready content management for an international multimedia organization

Tax Analysts is an agile, digitally driven organization. For more than a decade, it has committed itself to being customer-focused, fast-to-market and future-ready.

Challenge

The professional services team from Copyright Clearance Center (CCC) works with organizations like Tax Analysts as they navigate the digital transformation journey. CCC helps find ways to leverage people, process and technology to address the complex and changing landscape of publishing.

As a leading provider of tax news and analysis to the financial and legal industry, Tax Analysts supplies content and data daily to a global audience. The company's product development and content delivery efforts were hindered by legacy technology and inefficient processes. The IT organization searched for an integrated editorial content management solution (CMS) to allow it to break down production barriers and continue its path forward. To identify how best to support Tax Analysts on its journey, CCC conducted an intensive 6-week Discovery phase to document a strategic roadmap reflecting Tax Analysts' current state and future business goals.

The leadership team wanted to leverage the power of semantic enrichment to create more options for content navigation, make new features and services more visible and simplify the assembly of content products in more efficient ways.

By mapping out the end-to-end process around how Tax Analysts creates, acquires, enriches, reviews and publishes content, the CCC team identified a number of challenges and pain points:

1 Barriers to content reuse

Tax Analysts wished to create greater value from their existing content by making it more discoverable and easier to reuse. This would enable faster new product development and allow for reassembly of existing assets into specialized offerings for niche markets. The existing legacy platform had no capability for direct reuse resulting in manual processing, formatting, transformation and creation of renditions. In addition, it was difficult to discover relevant and useful content, and existing systems did not offer rights management information which would have aided and defined parameters for reuse.

2 Complex, manual processes

Tax Analysts' existing platform was a monolithic system requiring lengthy and sequential workflow processes to publish content to the website. A change to a tax law would require changes to their materials, but it took days, not hours, to publish to the site. The workflow process included multiple review cycles and gateways with rigid and constraining steps, contributing to a dynamic where staff preferred working outside of the system and interacting with it as seldom as possible. What's more, the workflows offered limited to no traceability, making it impossible to see who had interacted with an asset, see its versioning or rendition history, or even search for it effectively.

3 Link management difficulties

Broken links are troublesome for content consumers, making link validation a high priority for Tax Analysts. The Tax Analysts content team was responsible for maintaining more than 6 million links. Manual testing and cleanup resulted in a huge drain on productivity and required intervention throughout the editorial process, with changes still vulnerable to human error. In addition, Tax Analysts needed to introduce support for deep linking from any piece of content to granular, low level content objects and references. This would give consumers the benefit of instant access to the specific information they were seeking. The manual link validation process would only exacerbate the productivity challenges and would not support this requirement.

4 Unsupported legacy technologies

Tax Analysts' existing system was built upon legacy technologies no longer fit for purpose, maintained and optimized for day-to-day tactical priorities and not supportive for remote access or centralized management.

At a strategic level, Tax Analysts needed to transform the company's overall approach to content management to support plans to evolve product lines and strengthen its competitive standing in a fast-paced and changing industry. For example, the leadership team wanted to leverage the power of semantic enrichment and content relationship modeling to drive value to internal users and to external consumers by creating more options for content navigation, make new features and services more visible, and simplify the assembly of content products in more efficient ways. Taking these steps were anticipated to reduce operating costs, boost productivity, and support the company's broader vision.

Technologies integrated:

- Alfresco
- MarkLogic
- Drupal (in-house)
- ElasticSearch (in-house)

CCC Custom Modules:

- Collections
- Search-based Library
- Bulk Metadata Upload
- Alfresco-MarkLogic Connector
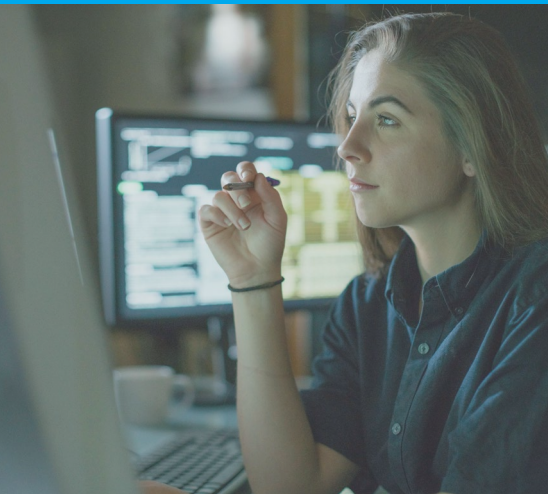
Solution

The Tax Analysts team worked with CCC to design an end-to-end editorial CMS to immediately streamline and simplify Tax Analysts' current content processes with an eye toward future content management goals. The editorial CMS integrates with Alfresco for enterprise content management, MarkLogic for its XML database, RDF triplestore to control and model the relationships between assets, and ElasticSearch for powerful search and discovery capabilities.

Collections

Users can plan and assemble products with Collections, an intuitive content assembly interface. Collections delivers simple drag-and-drop collation and ordering of digital content assets, alongside 'work in progress' previews of how the finished product will look.

By enabling the creation of 'reuse references' within products — the ability to repurpose an asset by linking through to the original, rather than by creating a copied asset — the CMS enables powerful content reuse while promoting a 'One Source of Truth' content model. Information like author biographies and photographs is linked and managed alongside content, making it easy to dive deeply and see everything a given author has written or to navigate from content item to content item to author information in a single experience.

Collections makes it easy for users to search, filter and discover content assets so they can quickly and efficiently assemble products. The streamlined production process reduces time-to-market for new products for both broad and specialized markets.

Once products have been assembled into a content manifest, users follow easy workflows for web production — enabled by MarkLogic and Drupal — or print format — enabled by FrameMaker. The approach both streamlines the process from creation to publish while retaining the flexibility needed for customization when warranted.

Automated link validation

To tackle the broken link challenge, the team leveraged MarkLogic RDF triplestore and SPARQL queries to develop a powerful link resolver service, designed to prevent broken links from happening and eliminating manual validation. The system automatically warns users when linked content will be affected by an update, reducing the likelihood of broken links, orphaned assets and content without context. This solution gives the editorial teams more time to focus on higher value work and creates a solid foundation for the deep link elements of the company's future digital strategy.

Deep linking of content

The CMS strategically enables content enrichment and content linking so both internal users and external consumers can more easily navigate and discover the value in Tax Analysts' content. CCC created a solution that leverages MarkLogic RDF triplestore so users can refer directly to a paragraph, table cell, graph — rather than being limited to linking document-to-document. This enables rapid and more intuitive search and discovery so consumers can find exactly what they're looking for while also vastly reducing production time for authors and editors.

Networks of knowledge: entity identification & linking

Tax Analysts' internal database of people has also been integrated into the knowledge network, delivering a rich source of information. For example, it tracks reports and legislation a particular person has authored, organizations an author has been affiliated with, places a report has been cited, legislation impacted by a particular

> "This CMS has helped Tax Analysts address business technology challenges in ways that will enable us to more easily adapt to changing business needs and increase the value that we bring to our customers."

Michael Berkeley,
CTO, Tax Analysts

tax code, etc. This content-tocontent linking shows where and how entities are related, giving Tax Analysts' customers access to a wealth of knowledge and helping them find the answers they are looking for. The CMS leverages the RDFaCE content editor based on TinyMCE to facilitate semantic authoring, editing and annotating of whole documents and the ability to mark-up specific entities (such as organizations, names, citations, reports, etc.) in-line. Marked-up entities are managed as discrete objects, creating a dynamic network of knowledge that can be navigated via content hyperlinks. This content-to-content linking shows where and how entities are related.

Results

In addition to addressing the company's immediate content and editorial requirements, the CMS also offers a platform to support future growth and the company's ability to compete in a fast-paced and fluctuating industry. The CMS supports initiatives to:

- More rapidly assemble existing content assets into new products for both specialized markets and new services for new audiences
- Publish in near real time by supporting faster workflows for website updates and changes
- Enrich content in new and better ways and make it more discoverable by both internal staff and external consumers through semantic enrichment and better linking to more granular content elements.

Key to this effort is the use of flexible, adaptable technology. By integrating interoperable technologies built upon open standards, the team created a solution that not only reflects Tax Analysts' current business needs, but which is also designed to grow and change as needs evolve.

Looking ahead

Once content is published on various delivery platforms; the system maintains content enrichment and metadata to drive potential new services to the consumer. Tax Analysts is using this advantage to explore 'Point in Time' views of content pertaining to tax regulations and legislation. Users could potentially view a particular piece of content about a law as it existed at a particular time and compare it to content related to the impact of subsequent amendments, repeals and citations.

About CCC

A pioneer in voluntary collective licensing, Copyright Clearance Center (CCC) helps organizations integrate, access, and share information through licensing, content, software, and professional services. With expertise in copyright and information management, CCC and its subsidiary RightsDirect collaborate with stakeholders to design and deliver innovative information solutions that power decision-making by helping people integrate and navigate data sources and content assets.

CCC
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Learn more about our licensing, content, and data solutions:

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